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Effects of soil covering materials on the overwintering and the growth of *Cynanchum wilfordii* Hemsley

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Abstract

This study was performed to select the soil covering materials for winter safety of *Cynanchum wilfordii* Hemsley and to investigate the effect on the growth after overwinter. Soil covering materials such as vinyl, rice straw, lagging cover, vinyl+lagging cover, and non-covering were investigated how effect on overwintering rate, growth and yield of *Cynanchum wilfordii* Hemsley. In changes of soil temperature according to the soil covering materials, non-covering treatment was recorded the highest to 26.7°C, and lagging cover and rice straw showed little change of soil temperature with 9.2 and 9.3°C, respectively. Regrowth rates of early growth after overwinter were lowered in the order as rice straw > vinyl+lagging cover > lagging cover > vinyl > non-covering. From the above-ground growth by soil covering materials, vine length showed similar growth in all treatments except vinyl covering and stem diameter exhibited the thicker pattern in vinyl and lagging cover, and there was no significant difference among treatments in number of branch. Flowering period is recorded July 30 in all treatments and ripening period is October 16. Yield of seed production is showed the best in vinyl+lagging cover with 25g/m². Root weight and root length for subterranean growth showed no significant differences among all treatments. Yield is produced the highest in vinyl+lagging cover with 433kg/10a and the next to lagging cover with 431kg/10a. In comparison with incomes, lagging cover earned to 9,882 thousand won/10a, showed the effect on income enlargement to 21%, compare to that of the non-covering.

Keywords: soil covering materials, *Cynanchum wilfordii* Hemsley, vinyl, rice straw, lagging cover

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